Commonwealth of Massachusetts

Influenza Pandemic Preparedness Planning Document

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Division of Epidemiology and Immunization
Bureau of Communicable Disease Control
Massachusetts Department of Public Health

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This planning document was initiated by the Division of Epidemiology and Immunization, Bureau of Communicable Disease Control, Massachusetts Department of Public Health, using the document, *Pandemic Influenza: A Planning Guide for State and Local Officials 2.1* (CDC, U.S. Dept. of Health & Human Services.)

As of December 2000, representatives from the following agencies have reviewed drafts of this document and have provided comments:

The Boston Public Health Commission
The Massachusetts Association of Public Health Nurses
The Massachusetts Department of Public Health
The Massachusetts Emergency Management Agency
The Massachusetts Health Officers Association
The Massachusetts State Laboratory Institute
The National Vaccine Program Office, CDC

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An influenza pandemic will pose two distinct and serious threats to the residents of Massachusetts:

- devastating health effects and
- disruption of critical community services due to incapacitation of the ”human infrastructure”.

Both require contingency planning.

Phases of a Pandemic

The World Health Organization (WHO) has defined phases of a pandemic to assist with planning and response activities. For purposes of consistency, comparability and coordination of the national, State and local response, identification and declaration of the following phases will be done at the national level.

WHO Pandemic Phase	Definition
Inter-Pandemic Period (WHO Phase 0, Preparedness level 0)	No indications of any new virus type have been reported. Influenza viruses antigenically related to those recently circulating among humans continue to evolve and cause disease.
Novel Virus Alert (WHO Phase 0, Preparedness level 1-2)	A novel influenza strain has been identified in at least one human. A substantial portion of the population has little or no antibody to the novel virus, but the ability of the virus to rapidly spread person-to-person and cause multiple outbreaks of disease remains questionable.
Pandemic Alert (WHO Phase 0, Preparedness level 3)	Human transmission of the new virus sub-type has been confirmed through clear evidence of person-to-person spread in the general population, with at least one outbreak lasting over a minimum of a two-week period in one country.
Pandemic (WHO Phases 1-3)	The new virus sub-type has been shown to cause several outbreaks in at least one country, and to have spread to other countries with consistent disease patterns indicating that serious morbidity and mortality is likely in at least one segment of the population. This phase will continue influenza activity in initially affected regions has stopped or reversed while outbreaks of the new virus are still occurring elsewhere.
Second Wave (WHO Phase 4)	A second outbreak of disease within the same geographic area that occurs 3-9 months after the initial wave of disease.
Post-Pandemic (WHO Phase 5)	Indices of influenza activity have returned to essentially normal inter-pandemic levels and immunity to the new virus sub-type is widespread in the general population

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Section 1
Command, Control and Management Procedures

1. Executive Planning Committee

The first step in the planning process should be the establishment of an Executive Committee comprised of key representatives from the health sector, which may take the lead, and the emergency response sector. This Committee will

1. devise the overall structure and responsibilities of "command and control" operations;
2. oversee planning, response, recovery and mitigation efforts; and
3. ensure that the pandemic plan is developed, reviewed, and periodically revised.

Representation on the Executive Committee may include:

- Governor's Office (supplemented by representatives of the Mayor's office for large metropolitan areas)
- State Health Officer (supplemented by Local Health Officers, as needed)
- State Epidemiologist
- State Office of Emergency Preparedness (and/or local emergency planning committees)
- Public health laboratory personnel
- Public health information officer
- Immunization Project Director
- Office of General Counsel

As of October 2000, a state-level Pandemic Executive Planning Committee in Massachusetts does not exist.

2. Identify and Meet with Partners and Stakeholders to:

1. promote awareness;
2. assign specific responsibilities; and
3. develop specific components of the plan.

Once the Executive Committee decides on lead responsibilities for planning and implementation, a series of meetings with potential partners and stakeholders should occur. The pandemic preparedness plan must be prepared in close collaboration with, and with "buy in" from a wide variety of organizations in the public and private sectors, much like the current practice of health agencies of forming and joining coalitions to advance a common goal. Such organizations may include, but not be restricted to:

- MDPH Bureau of Communicable Disease Control
- MDPH Immunization Program
- Nursing associations
- Medical associations
- Pharmacy associations
- Public and private laboratories that may process clinical specimens for influenza
- Personnel responsible for communication systems equipment, networks, computer hardware and software
- Education administrators
- Local media officials
- Radio/CB groups (e.g., RACES, REACT)
- Social services agencies
- Volunteer organizations involved in response and recovery to various disasters
- Law enforcement, fire/rescue, and emergency medical services (including dispatchers/911 at the local level)
- Area hospitals, Emergency Medical Services agencies, medical societies, medical examiner, coroner, and other appropriate members of the medical community
- Funeral directors
- Local military installations
- Large industries or employers in the area
- State aviation authority and/or others involved in the provision of air support and transport
- Representatives of major public utilities (to ensure continued service during the pandemic)
- The State's Chief Financial Officer, auditor, and heads of centralized procurement and/or resource support agencies

3. Address Major Priorities

The principal elements of this pandemic plan will eventually include

1. a description of the command, control and management structure and functions; and
2. contingency plans to address surveillance, vaccine and antivirals delivery, communications, and emergency preparedness (maintenance of health services and essential community functions).

DURING THE INTER-PANDEMIC PERIOD:

- Address each operational priority
- Ensure that the Massachusetts pandemic plan is developed, either as an annex or supplement to the Comprehensive Emergency Management Plan
- Identify crucial gaps in infrastructure and resources, laws and/or statutes, which, if not corrected in advance, may interfere with an effective response

- Develop a "marketing strategy" to inform key government officials, legislators, and various stakeholders of the need to address and resolve these gaps in advance of the pandemic
- Coordinate planning activities with bordering jurisdictions and special populations
- Review and modify the plan as needed on a periodic basis

DURING THE NOVEL VIRUS ALERT:

- Meet with appropriate partners and stakeholders and review major elements of the plan
- Modify the plan as needed on an urgent basis

DURING THE PANDEMIC ALERT:

- Activate enhanced surveillance and communications plan
- Begin vaccine and antiviral distribution
- Notify key government officials and legislators of the need for additional monetary resources (if not already available)

DURING THE PANDEMIC PHASE:

- Fully activate the plan
- Coordinate activities with neighboring jurisdictions
- Interface with appropriate counterparts at the national level

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Section 2
Surveillance

The Surveillance Section describes the system that will be used in Massachusetts to detect and characterize circulating strains of influenza virus and generate epidemiologic information. This information will be used to guide the actions of public health officials during a pandemic.

DURING THE INTER-PANDEMIC PERIOD:

- The Massachusetts Immunization Program (MIP) will maintain, and continue to enhance and refine, the existing influenza surveillance infrastructure of the Massachusetts Department of Public Health, described below.

1. Sentinel Influenza Surveillance

Massachusetts participates in passive influenza surveillance through the U.S. Influenza Sentinel Surveillance Project, which is jointly coordinated by the CDC. This project provides a central repository for influenza morbidity and virologic surveillance data that can be rapidly analyzed by the CDC.

As of December 2000, Massachusetts has 26 sites from across the state enrolled as influenza sentinel surveillance sites, more than the recommended one per 250,000 population.

The goals of the Influenza Sentinel Surveillance Project are:

A. During interpandemic periods:

a. provide epidemiologic information during the annual influenza season; and

b. monitor antigenic changes in circulating viruses in order to provide information for the formulation of vaccine for the subsequent season.

B. During a potential or actual pandemic:

a. provide epidemiologic information regarding the presence of pandemic strains and the magnitude of influenza illness in the Unites States to guide the actions of public health officials.

The sentinel sites provide the following information:

A. Laboratory Component: The sentinel sites submit throat swab specimens from 2 – 3 patients with influenza-like illness (ILI) to the State Laboratory Institute (SLI) for influenza testing, at each of the following stages during the influenza season:

a. at the beginning of the season (usually late October or November), when ILI first presents at a health care facility;

b. midway through the season (usually late December and January); and

c. toward the end of the season (usually March or early April).

B. Morbidity Reporting Component: The sentinel sites report influenza morbidity data directly to the CDC via telephone or fax on a weekly basis from the second week in October through the last week of May. The weekly transmission consists of:

a. the number of patients seen for ILI during a given week in each of four age categories: 0–4 years; 5–24 years; 25–64 years; and ≥ 65 years; and

b. the total number of patients seen for any reason at the sentinel site during that week.

2. Reports of ILI above Baseline

The CDC compiles morbidity data submitted by the sentinel sites and provides weekly reports on the percent of visits that are due to ILI on the national, regional and state level. This percent is compared to a baseline of 0 – 3%. The weekly reports also include morbidity as assessed by state and territorial epidemiologists as "sporadic", "regional" or "widespread". These reports are available from a CDC site on the Internet.

3. Enhanced Surveillance at Sentinel Sites

When enhanced surveillance is needed, the MIP enlists the assistance of sentinel sites and other health care facilities to rapidly identify any possible importation of a specific influenza virus. By 2002, the current sentinel surveillance system will be expanded and diversified. Specifically:

- Increase the number of sentinel sites submitting specimens to at least 35.
- Increase the diversity of the sites to ensure they will provide population-based information.
- Select sites that will also allow identification of influenza in specific subpopulations (e.g., high-risk groups, hospital and emergency rooms, children, healthy adults and work-based populations, those likely to travel or have visitors particularly from Asia and the Southern Hemisphere).
- The influenza epidemiologist will contact sites on a regular basis to ensure they are both reporting ILI and submitting specimens for testing appropriately.
- Improve the timeliness and viability of the viral specimens collected and submitted for isolation:
- Specimen collection kits will be sent to sites at the beginning of the season (and as needed) via an overnight mail delivery service, and will be submitted via regular mail on Monday through Wednesday for free testing.
- Increase the number of viable specimens submitted for arrival on Thursday and Friday by use of a free overnight mail delivery service.
- Specimen collection kits will be rapidly deployed to sites on an as-needed basis via courier or an overnight mail delivery service to facilitate diagnosis and outbreak control.
- Reporting of virologic isolates will differentiate specimens submitted by sentinel and non-sentinel physicians.

- Historical laboratory morbidity data in Massachusetts will be reviewed and baselines/thresholds determined by 12/1/01.

4. Laboratory Testing for Influenza

The SLI Virus Isolation Laboratory provides viral isolation (for typing and sub-typing) and serologic testing for influenza on specimens submitted by both sentinel and non-sentinel sites. The Virus Isolation Laboratory tests 200 – 300 influenza specimens annually. The following hospitals in Massachusetts routinely isolate influenza virus and send isolates to the SLI for subtyping:

Massachusetts General Hospital, Boston
Beth Israel Deaconess Medical Center, Boston
Brigham and Women's Hospital, Boston
Children's Hospital, Boston
New England Medical Center, Boston
University of Massachusetts Medical Center, Worcester

By 2002, laboratory capacity for surveillance of influenza during the season (October through March.) and for the differential diagnostic testing of other respiratory pathogens that also cause ILI (e.g., adenovirus, RSV, parainfluenza types 1-3, *Legionella* species and *M. pneumoniae*) will be expanded. Specifically:

- The influenza epidemiologist will actively solicit submission of clinical specimens from our expanded number of sentinel sites at regular intervals throughout the influenza season (October through March.)
- The influenza epidemiologist will actively solicit the submission of secondary isolates, and the results of any rapid testing being done, at regular intervals from all the other laboratories in our state performing primary isolation.
- Laboratory staff will perform rapid influenza testing for influenza A and B on select specimens to facilitate outbreak investigation and control, as well as to limit the spread of imported influenza.
- The number of clinical specimens tested for influenza will increase by 15%. All positive specimens will be subtyped for surveillance and diagnostic purposes.
- The number of secondary isolates confirmed and subtyped from other laboratories will increase by 10%.
- Laboratory staff will perform differential diagnostic testing for other respiratory pathogens.

The SLI Virus Isolation Laboratory provides weekly cumulative reports of submissions for viral isolation to the MIP.

The MIP Influenza Surveillance Coordinator maintains two databases with the following information:

a. the number of specimens submitted, whether by sentinel or non-sentinel sites; positive cultures and serologies; and virus types and subtypes; and
b. demographic and epidemiologic information on each positive case.

5. Investigation of Clusters

Division of Epidemiology and Immunization staff investigate reported clusters of ILI at long-term care facilities and other institutions (see the MIP document, *Guidelines for Pneumonia/Influenza Outbreaks or Clusters in Long-Term Care Facilities)*.

6. Investigation of Non-Season Influenza Cases

The Influenza Surveillance Coordinator routinely investigates any cases of influenza that occur outside of the regular influenza season.

7. Deaths from Influenza and Pneumonia (P&I)

Nine cities in Massachusetts report weekly to CDC on deaths from pneumonia and influenza, which is reported in the MMWR. These cities are Boston, Cambridge, Fall River, Lowell, Lynn, New Bedford, Somerville, Springfield and Worcester. The MIP is entering into discussions with the Registry of Vital Statistics to look at how we may be able to get this information for all cities in Massachusetts on a regular basis.

8. Syndromic Surveillance Data from a Managed Care Organization.

- HPHC will create a baseline data set with all relevant ambulatory medical record encounters, including diagnoses and antibiotic prescriptions, plus antibiotic dispensing for the period 10/1/99-9/30/00.
- Specific search criteria for syndromes consistent with ILI will be developed.
- The total number of individuals seeking care will be determined, overall and for specific subgroups.
- The initial focus for subgroup analyses will be specific geographic areas of residence and age/sex groups. The desirability/ feasibility of assessing other groupings, such as the workplace, will be explored. The counts of individuals will be reported.
- Criteria will be developed for recognition of potential ILI clusters. These criteria will take into account season-specific information about respiratory pathogens that are circulating in the community. Initial evaluation will involve review of the electronic medical records.
- If feasible, ILI syndromic surveillance will be incorporated into Massachusetts' traditional influenza surveillance system.
- HPHC will work with MDPH to develop an infrastructure for rapid identification and response to ILI and ILI clusters using this system in conjunction with other laboratory and clinical indicators.

8. Develop a system for year-round surveillance of influenza.

- A subset (25%) of our regular sentinel sites will be selected to submit specimens during the 'inter-season' (April through September). Selection criteria for these sites will include patient populations likely to travel or have visitors from other countries, particularly Asia and the Southern Hemisphere; staff willing to collect and submit specimens; capacity to perform rapid influenza screening test and geographic /population diversity.

    - Epidemiology staff will actively solicit submission of specimens from patients at these sites with a high likelihood of importing influenza into Massachusetts. Selection criteria for patients will include meeting the case definition for ILI, and some epidemiologic indicators (e.g., recent travel or visitors from Asia, the Southern Hemisphere, Alaska, cruises or other setting identified as having outbreaks of influenza).
    - Isolates will be reported to CDC via National Respiratory and Enteric Virus Surveillance System (NRVESS).
    - Demographics on cases will be reported electronically to the Epidemiology Section of the Influenza Branch at CDC electronically or by telephone.

- The SLI Virus Isolation Laboratory has cross-trained staff to ensure adequate personnel for influenza viral testing.
- The MIP is exploring additional surveillance systems to enhance existing influenza surveillance. These include hospital admission data, hospital discharge data, HMO influenza data and ambulance diversions.
- The MIP is exploring contingency plans for enhancing State and local virologic and disease-based surveillance systems in the event of a novel virus alert or pandemic alert. These enhancements might include surveillance of severe respiratory illness and unexplained deaths at local hospitals; surveillance at clinics catering to international travelers; and surveillance of persons travelling from geographic areas in which the novel strains have been isolated.
- The MIP maintains a list of Influenza Coordinators and Immunization Program Coordinators for the five states bordering Massachusetts. And updates this list annually.
- MDPH is enhancing electronic and telecommunications capability with local communities, neighboring states and CDC through the Massachusetts Health Alert Network.

DURING THE NOVEL VIRUS ALERT:

- The MIP will monitor bulletins from CDC regarding virologic, epidemiologic and clinical findings associated with new variants isolated within or outside the U.S.
- The MIP will distribute these bulletins to local health departments, health care facilities and other agencies as appropriate.
- The Viral Isolation Laboratory will obtain appropriate reagents from CDC to detect and identify the novel strain.
- The MIP will meet with the Viral Isolation Laboratory and other partners to review major elements of enhanced surveillance activities and modify and update plan as needed.
- The MIP will activate enhanced local surveillance to detect importation and local spread in coordination with CDC.

DURING THE PANDEMIC ALERT:

- The MIP will fully activate enhanced surveillance activities; assess functionality, timeliness and completeness of reporting (including "zero case" reporting), data entry and dissemination, and links and feedback at higher and local levels of the system.

DURING THE PANDEMIC PHASE:

- The MIP will ask the influenza sentinel surveillance sites to submit two specimens a month for the duration of the pandemic.
- The MIP, in collaboration with CDC, local health officials, clinicians and academicians, and using protocols developed the CDC, will implement and pilot-test final modifications in enhanced surveillance system, which may include:
  - Documentation of outbreaks of influenza in different population groups
  - Determination of age-specific attack rates, morbidity and mortality
  - Description of unusual clinical syndromes (as well as risk factors for those syndromes and appropriate treatment)
  - Description of unusual pathologic features associated with fatal cases
  - Efficacy studies of vaccination or chemoprophylaxis
  - Monitoring of ability of hospitals and outpatient clinics to cope with increased patient loads
  - Assessment of the effectiveness of traditional control measures such as school and business closings
  - Assess the medical, social and economic impact of the pandemic

Unresolved issues (from CDC guidelines):

1. *Contingency plans for enhancing State virologic and disease-based surveillance systems in the event of a novel virus alert or pandemic alert, including surveillance of:*
   a. *severe respiratory illness; and*
   b. *unexplained deaths at local hospitals.*

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Section 3
Vaccine Management

The Vaccine Management Section describes the system that will be used to order, store, distribute and track influenza vaccine during a pandemic. In the event of a pandemic, influenza vaccine in Massachusetts will be distributed using the established vaccine distribution system, with contingency plans for storage, transport and security for vaccines.

The amount of vaccine that will have to be managed (ordered, stored, distributed and accounted for) by the MIP Vaccine Unit will be affected by the following factors:

- Vaccine availability – manufacturers' ability to produce and distribute vaccine.
- The proportion of available vaccine that will be purchased and distributed by the public versus the private sector.
- Funds available for the public purchase of vaccine (an estimated $24-36 million for 12 million doses).
- Amount of vaccine available for public purchase through federal contract(s).
- Amount of vaccine available for public purchase through contracts negotiated between the state and manufacturers.

Assumptions

This Vaccine Management Plan is based on the following assumptions:

A. There will be a minimum of 6 – 8 months between a novel virus alert and the availability of vaccine.

B. Administration of two doses, 30 days apart, may be necessary in some or all target groups for optimal immunologic responses.

C. Vaccine shortages are likely to exist, especially early during a pandemic.

D. The proportion of influenza vaccine to be distributed and administered through the public versus the private sector is unknown. At the very least, the public sector will be responsible for vaccinating the poor and uninsured, and essential health care and other community personnel. This will happen at both the State and local level.

E. The amount of influenza vaccine distributed by the public sector during the pandemic will be greater than the amount distributed by the public sector in non-pandemic years.

F. There will be a federal contract for purchase of vaccine.

G. A tentative rank order list of priority groups for receipt of the vaccine will have been determined. This may change on short notice depending upon the epidemiologic and clinical features of the pandemic disease.

H. In addition to distributing vaccine, MDPH and local health departments will have plans in place to administer vaccine to residents based on the Priority Groups List established by the Pandemic Executive Planning Committee.

I. Administration of vaccine to the general public will occur at the local level; the responsibility of the MIP Vaccine Unit is to ensure the efficient distribution of viable vaccine to 160 local vaccine distributors, as described below.

J. Influenza vaccine will be distributed in 10-dose vials.

K. Even if the maximum amount of 12 million doses becomes available, it will arrive over a period of months.

L. Because there is likely to be a moderate to severe shortage of vaccine, at least in the early phases of the epidemic, security for the vaccine must be addressed.

M. A system for monitoring vaccine coverage will have to be developed.

N. The current VAERS system will be used to monitor vaccine safety.

O. While distribution of all other vaccines will be maintained during the pandemic, inventories of non-influenza vaccine will be reduced at the regional and local distributor sites.

P. The impending licensure of an over-the-counter, self-administered live, attenuated influenza vaccine may greatly alter the Vaccine Management Plan as it now stands.

Q. Public education will be an important part of the immunization campaign.

DURING THE INTER-PANDEMIC PERIOD:

- Increase influenza vaccination rates in Massachusetts as follows to reduce the annual toll from influenza, enhance the existing vaccine delivery infrastructure and facilitate access to high-risk populations when the pandemic occurs:
  a. 90% of non-institutionalized adults 50 years of age an older and 60% of high risk adults 18-49 years of age will receive an annual influenza vaccination, as measured by the BRFSS.
  b. 90% of institutionalized chronically ill and elderly adults will receive an annual influenza vaccination, as measured by the annual Massachusetts Department of Medical Assistance (DMA) survey of nursing homes.
- Increase pneumococcal vaccination rates in Massachusetts as follows to reduce the incidence and severity of secondary bacterial infections now and during the next pandemic:
  a. 90% of non-institutionalized adults 65 years of age an older and 60% of high risk adults 18-64 years of age will receive a pneumococcal vaccination, as measured by the BRFSS.
  b. 90% of institutionalized chronically ill and elderly adults will receive a pneumococcal vaccination, as measured by the annual Massachusetts Department of Medical Assistance (DMA) survey of nursing homes.
- The MIP will continue to enhance and refine the existing state-supplied influenza vaccine distribution infrastructure.

The MIP annually distributes more than 3.7 million doses of vaccine, purchased with federal and state funds, to more than 3,000 pediatric and adult health care providers. This includes more than 700,000 doses of influenza vaccine annually. Currently, state-distributed influenza vaccine is purchased through contracts negotiated directly between the MIP and vaccine manufacturers, following a state procurement process. In addition, approximately the same number of doses of influenza vaccine is purchased and distributed through the private sector.

State-purchased vaccines are distributed to public and private providers from a central site at the Massachusetts State Laboratory Institute (SLI) in Jamaica Plain, through a network of six regional offices and over 160 local vaccine distributors (primarily local health departments).

The MIP Vaccine Unit at the SLI is responsible for ordering, receipt, storage, handling, packing, shipping, and disposal of all publicly-purchased vaccines in Massachusetts. Vaccines are ordered and stored centrally, and transported by courier to the six regional offices. The 160 local distributors then pick up the vaccines from the regional offices. Health care providers pick up their vaccines from the local distribution sites.

1. Vaccine Ordering, Storage and Distribution

A. State Laboratory Institute (SLI)

In January of every year, the MIP Vaccine Unit determines the amount of influenza vaccine it will purchase for the coming year and puts out an RFR to initiate the bidding process. During inter-pandemic periods, state-supplied influenza vaccine is prioritized to agencies holding public vaccination clinics, long-term care facilities and health care providers seeing high-risk children. A small amount of influenza vaccine is held in reserve at the SLI for use in outbreak control.

In June, providers are notified of their allocation of state-supplied influenza vaccine, based on the previous year's accountability. Usually around Labor Day, influenza vaccine is shipped to the SLI in cardboard boxes, 100 10-dose vials to a case.

Standard operating procedures are in place to safeguard vaccine during power outages and other emergencies. A detailed description of emergency procedures is included in the MIP document *Vaccine Storage and Accessibility Guidelines*.

B. Regional Offices

As soon as the influenza vaccine arrives at the SLI, private contracted courier services transport the vaccine in case quantities from the SLI to the regional offices, which are staffed by MIP personnel. The vaccines remain packed in the containers in which they were received from the manufacturers. The temperature of the vaccine in the case is measured prior to leaving the SLI, and again on arrival at the regional office. The arrival time and temperature of the vaccine is recorded and phoned to the Vaccine Unit at the SLI.

Regional MIP staff notify the 160 local distributors that the vaccine is available. Information, including the Vaccine Information Statements (VISs) and Vaccine Usage Forms, which document the age groups of the vaccine recipients, is distributed along with the vaccine.

Health care providers are encouraged to return unused vaccine to the regional offices as soon as possible for redistribution. Health care providers return their Vaccine Usage Forms to the regional offices through their local vaccine distributor. These forms are forwarded to the Vaccine Unit for entry into the vaccine management software.

C. Local Vaccine Distributors

The 160 local vaccine distributors drive to the regional offices to pick up vaccine for providers in their jurisdiction. They transport the vaccine in an insulated container with cold packs. When health care providers go to a local distribution site, the same procedure described above is followed to ensure that the cold chain is maintained. Local Health Departments and other vaccine distributors maintain a log of all vaccine received from the regional office, including vaccine type, manufacturer, lot number, expiration date, and the quantity of vaccine received.

- Develop contingency plans to provide influenza vaccine to high priority groups and the general population during a pandemic. Because it is likely that a 2-dose schedule will be required, the MIP must be prepared to handle up to 12 million doses, 2.4 million doses/month for 5 months. If less vaccine is available to the public sector, the Vaccine Management Plan can be adjusted accordingly.

1. Vaccine Ordering

Once the amount of vaccine available and the how it will be apportioned between the public and private sectors is known, the MIP will meet with HMOs, hospitals and other health care providers in the private sector. Discussions will be held to determine the best way to meet the needs of the Commonwealth. The Executive Pandemic Planning Committee will make recommendations as to whom vaccine administered in the private sector should be targeted.

Regarding vaccine available to the public sector, CDC will notify the MIP as to how much vaccine will be available for Massachusetts through a federal contract. Vaccine may also be available through contracts negotiated directly between the MIP and vaccine manufacturers. The Executive Pandemic Planning Committee will determine the proportion of vaccine to be held at the SLI for administration to essential state personnel (based on the Priority Group List), and how much vaccine will be available to the cities and towns. The MIP will then notify each city and town accordingly.

Unresolved issues:

a) The proportion, if any, of the vaccine that will be purchased by the private sector.

b) Agreement with the private sector on how to best use resources and vaccine during a pandemic.

c) The amount of vaccine that will be available through the federal contract.

d) *The amount of vaccine, if any, that will be purchased through contracts negotiated between the state and the manufacturer(s).*

2. Transportation of Vaccine between SLI and Regional Offices

Vaccines are currently transported between the SLI and the regional offices by a contracted courier service. The courier transports the vaccine in the passenger compartment of the vehicle.

Up to 75,000 doses can be transported in the passenger compartment of an automobile at one time. Assuming that 12 million doses of vaccine become available, and that 2.8 million doses for the Metro region will remain at the SLI, a total of 9.2 million doses will need to be transported to the other regional offices. The vaccines will be shipped in the cardboard containers in which they are received from the manufacturer.

The table below shows the number of courier trips necessary to transport vaccine to each of the regions, if the vaccine is transported in automobiles.

Number of Courier Trips Necessary to Transport Vaccine To the Regional Offices[1]

Region	Number of Doses	Number of Trips	Cost per Trip[2]	Total Cost
Northeast	2,200,000	30	$ 44	$ 1,320
Southeast	2,440,000	33	$ 48	$ 1,584
Central	1,800,000	24	$ 60	$ 1,440
West	1,600,000	22	$ 119	$ 2,618
TOTAL	**9,190,000**	**125**		**$ 6,962**

[1] Assumes 2 doses of vaccine will be available for everyone.
[2] Based on 1999 costs for courier services.

MEMA could call upon MAESF 1, *Transportation* to provide transportation of vaccines to supplement the SLI-contracted courier services, if needed.

Unresolved issues:

1. *The MIP should get letters of agreement for extended courier services. MEMA will provide assistance with transportation for vaccines only if the MIP is unable to do so.*

3. Vaccine Storage

All vaccine will be stored at the SLI. Current vaccine storage capacity at the SLI is 2.5 million doses above the usual amount of vaccine stored there on a daily basis. A refrigerated tractor-trailer truck, if needed, will be obtained to store additional vaccine. A refrigerated tractor-trailer (45'x 8'x 8') costs approximately $1,000 per month and can be available within a couple of days.

In order to minimize storage problems in the regional offices, vaccine will be transported from the SLI to the regional offices on a daily basis as needed. Travel time from the SLI

to each office is less than one hour, except for the two-hour trip to the western regional office.

One scenario for the availability of influenza vaccine during a pandemic is that 20% of all the vaccine needed will be available every month for five months. Working with this scenario, Massachusetts can expect to receive 2.4 million doses/month, three time the amount of influenza vaccine processed by the MIP in a usual flu season.

Once it has been received at the central distribution site, vaccine will be moved very quickly through the system to the providers. Vaccine will not be stored in any one place for any length of time. The regional offices currently process and distribute their share of the 745,000 doses within 1 – 3 days of receipt of the vaccine.

As soon as the MIP is notified that vaccine is arriving, the MIP will alert the regional offices, which, in turn, will notify the local distributors. Current storage capacity at the SLI and the regional offices could accommodate 3.6 million doses of vaccine, in addition to the usual amount of vaccine stored on regular basis. This capacity may be extended if we decrease inventories of non-influenza vaccine.

It is highly unlikely that we would receive more than 3.6 million doses at one time. Should additional storage be necessary, however, the addition of one refrigerated trailer at the SLI would provide adequate storage capacity for the SLI, Boston and Metro regions, as well as for vaccine for the central, southeast and western regions until they have room to receive it. Tewksbury Hospital has sufficient capacity to store all the vaccine that would be needed in the northeast region. The table below also shows additional off-site storage that may be available to the regional offices, if necessary.

Current Influenza Vaccine Storage Capacity

Region	Population	Current Capacity[1] Doses	Additional Storage Site(s)	Additional Storage Capacity - Doses
SLI	6,000,000	2,500,000	Refrigerated Trailer	As needed
Metro (includes Boston)	1,975,000 (33%)	150,000	SLI refrigerated trailer	As needed
Northeast	1,100,000 (18%)	200,000	Tewksbury Hospital	1,500,000
Southeast	1,220,000 (20%)	200,000	No additional sites	
Central	900,000 (15%)	200,000	Walk-in refrigerator on site	400,000
West	800,000 (13%)	200,000	UMass – Amherst	200,000
	Total	3,600,000		

[1]Capacity beyond maximum usual amount of vaccine stored.

Unresolved issues:

a. *Plan for obtaining a refrigerated trailer. The MIP should have Letter of Agreement for a refrigerated trailer on a 24-hour call basis.*
b. *Formal agreement for back-up storage in the central, west and southeast regions. Letters of Agreement should be signed and reviewed annually.*
c. *Amount of vaccine that will be held back at the SLI for vaccination of essential personnel within state agencies (government, state police, state public health and public hospital personnel, etc.).*
d. *Identification of expanded distribution potential at the regional offices.*

4. Security for Vaccine

Vaccine will likely not be available until sometime into the pandemic, and is likely to be in short supply when it does become available. There may be a large demand for the vaccine and security during vaccine storage, transport and distribution may become an issue. If the MIP and regional offices are unable to provide adequate security for stored vaccine, MEMA has the authority to assign that mission to MAESF – 16.

In order to dispel rumors and decrease panic, it will be important to ensure that the general public has information about the availability of vaccine, how it will be distributed, how decisions were made regarding priority groups for the vaccine, and other measures that can be undertaken to prevent and control influenza. Please see the Communications Section for a full description of how information will be disseminated during a pandemic.

It is likely that vaccine will be received in multiple shipments over a number of months. Security for vaccine will have to be maintained at the SLI and the regional offices, and during transport between those sites. Central storage of vaccine will remain at the SLI.

A. Current Security at the SLI and Regional Offices

Currently, all vaccine storage units at the SLI and the regional offices are locked. The central units at the SLI are monitored 24 hours per day, 7 days per week. Security at the regional offices is as follows:

a. Metro region: located at the SLI, which is monitored 24 hours/day, 7 days/week.
b. Western region: campus security patrols the grounds at UMass Amherst
c. Northeast region: security guards patrol the grounds at Tewksbury Hospital
d. Southeast region: the regional office is alarmed to a private security company
e. Central Office: there are no alarms or security personnel at the central office in West Boylston
f. UMass and Tewksbury Hospital have State Campus Police Departments that would be points of contact for security. State Police would augment their services if needed.

B. Enhanced Security at the SLI and Regional Offices

It is the responsibility of MDPH to review the adequacy of the current security measures at the SLI and regional offices and to have a plan in place to enhance security, if needed. Should MDPH become unable to meet the need for security of vaccine, MDPH may

request assistance from MEMA.

As part of the Massachusetts Comprehensive Emergency Management Plan, MEMA has the authority to assign security to *Massachusetts Emergency Support Function (MAESF) 16: Law Enforcement and Security*, of which the State Police are the primary agency. If necessary, the State Police could provide 24-hour details at the SLI for the duration of the time needed. State Police could also provide 24-hour security for stored vaccine, and during distribution of vaccine, at those regional offices that are on state property (western, northeast and central offices), if needed. Because the southeast office is not state property, arrangements should be made with local police department before requesting assistance from MEMA

The MIP Vaccine Unit would remain responsible for management of vaccine, including coordination of distribution.

C. Security for Vaccine at the Local Level

Security for vaccine during transport between the regional offices and the local distribution sites, and during vaccine storage and distribution at the local distribution sites, will be the responsibility of the local authorities.

Unresolved issues:

1. *Discussion with the MDPH Regional Office Committee on the adequacy of security, jurisdiction for security (especially at the central and southeast offices), and contingency plans for enhanced security, if needed.*

5. Vaccine Accountability

During a pandemic, it will be particularly important to maintain strict accountability for vaccine. At the regional offices and local distributor sites, a special log for influenza vaccine will be maintained to record the manufacturer (assuming multiple manufacturers), lot number, expiration date and quantity of vaccine received and distributed.

At the provider level, a *Vaccine Administration Record* has been developed and is currently in use for mass immunization clinics. The information recorded on the *Vaccine Administration Record* satisfies the requirements for compliance with federal vaccine administration. In order to account for vaccine used the provider tallies the number of doses administered to each of nine age groups, and records the information on the Influenza *Vaccine Usage Form*. These forms are returned through the regional offices to the Vaccine Unit, where the information is entered into an Excel spreadsheet. Information on doses administered can be totaled and sorted on a daily basis. These forms will be reviewed by the MIP Vaccine Unit for appropriateness for use in a pandemic situation.

The *Vaccine Administration Record* and the *Vaccine Usage Form* may have to be modified to include information regarding priority group and/or dose (first or second), in addition to the existing age group.

6. Personnel

In order to process the additional doses of vaccine and the accompanying paperwork, staffing of the vaccine unit and the regional offices may have to be supplemented. Personnel to assist with vaccine management will be obtained through reallocation of Division of Epidemiology and Immunization staff and other Bureau of Communicable Disease staff and/or hiring of temporary staff. There is currently a mechanism in place to hire temporary personnel for vaccine management.

Written protocols for vaccine distribution will be developed to facilitate new or reassigned staff to assist with vaccine distribution functions. During the 6-8 months between the pandemic alert and the availability of vaccine, Division and/or temporary staff will be given specific assignments related to vaccine management, and will be trained by the Vaccine Unit as to their duties.

Additional staffing at the 160 local distributor sites will be the responsibility of the local authorities.

The need for additional staff will depend upon the amount of vaccine that will available for distribution through the public sector. At a minimum, and with no additional resources, the MIP could manage 700,000 doses a month. The MIP, however, should prepare for the possibility of all vaccine being distributed through the public sector. The following four scenarios regarding vaccine availability are used to estimate additional staffing needs during a pandemic.

No. of Doses Processed by the MIP Vaccine Unit	**No. of Additional FTEs Needed**		
	Central Office	**Regional Offices**	**Total**
Up to 700,000 doses	0	0	0
1 million doses/month	1	5 (1/region)	6 FTEs for 12 months
2 million doses/month	2	10 (2/region)	12 FTEs for 6 months
3 million doses /month	3	15 (3/region)	18 FTEs for 4 months

It would be difficult for the regional offices to find space for more than one or two additional staff. Should more staff be necessary, we will have to find additional space at the regional offices for vaccine distribution.

Unresolved issues:

a. *The extent of need for additional personnel will not be known until we know how much vaccine will be available.*
b. *Existing contracts for temporary personnel should be reviewed to ensure sufficient flexibility to meet the need in the event of a pandemic.*
c. *Discussions will be held with the MDPH Regional Office Committees to explore alternatives for space for additional staff and vaccine distribution activities.*

d. *Development of individual plans for each regional office to define needs for space for storage of vaccine and to accommodate additional personnel if needed.*

7. Access to Emergency Funds

Funds may be needed quickly to pay for vaccines and additional personnel, courier services, and/or space for storage and distribution of vaccines on an emergency basis. A system that enables state agencies to procure emergency commodities or services "…whenever the health, welfare or safety of persons…is threatened" is authorized by 801 CMR 21.00. Departments are required to execute a contract with the entity selected to perform the contract. The appropriate version of the Commonwealth Terms and Conditions and a Standard Contract Form should be executed as soon as possible after the need for the emergency commodity or service arises. (*The Commonwealth of Massachusetts Procurement Policies and Procedures Handbook).*

Within the SLI, the SLI Administrative Director has the authority to override the $1000.00 limit on incidental spending. Following a request by a program within SLI, the Administrative Director will facilitate emergency access to funds for purchase or lease of goods or services.

According to MEMA, two other mechanisms for accessing emergency funds are:

a. At the state level, a Declaration of a Public Health Emergency may be issued. In this case, scripted letters should be available to facilitate a quick turnaround of a budget request by the Commissioner of Public Health.

b. The Governor could issue an Executive Order identifying the need for quick action by all state agencies, including Administration and Finance to release funds necessary to respond to the pandemic.

Unresolved issues:
MEMA may have sample letters for emergency budget requests.

8. Education Regarding an Immunization Campaign

See Communications Section of this plan.

- Consider modifications or refinements to the priority groups:

Because vaccine shortages during an influenza pandemic is likely, the U.S. Public Health service, in conjunction with various advisory committees, is in the process of formulating recommendations for a rank-order list of high priority groups for vaccination. The following prioritized groups will need to be reexamined at the time of a pandemic alert when epidemiologic data about the pandemic virus are available. Massachusetts will need to adapt the priority group guidelines according to local infrastructure implications.

Note: Estimated numbers for Massachusetts were calculated by multiplying the estimated national numbers by 2.3%.

Priority Group 1: Health Care Workers who care for patients in acute and long term care facilities and in home care settings and **Public Health Workers** who are participating in vaccine delivery efforts. (est. 170,000)

Rationale: This group represents our first line of defense and the implementation of the response plan is dependent on this sector continuing to function. In addition, it is anticipated that morbidity and mortality from all diseases and illnesses will increase during a Pandemic making Health Care and Public Health workers even more critical.

Priority Group 2: Firefighters, police, National Guard, military personnel, ambulance drivers and other first responders (est. 280,000)

Rationale: These essential personnel must be in place to maintain the national defense and assist in the vaccination effort. It is anticipated that the National Guard would be an integral component of most state response plans.

Priority Group 3: Persons at High Risk to Develop Severe Outcomes following influenza infection. (est. 1.7 million)

Rationale: In order to meet our objective of reducing mortality we must address the most vulnerable citizens. The Advisory Committee on Immunization Practice has generally identified the following groups as those at highest risk. Their relevant order could vary depending on the specific strain of the virus encountered and further subdivision may be possible.

- Persons with high-risk medical conditions.
- Pregnant women
- Persons in nursing homes and long-term care facilities
- Healthy persons $\geq$ 65 years of age living independently
- Infants 6 months to 1 year of age, if supported by epidemiologic data

Priority Group 4: Household Contacts of persons with high-risk medical conditions (est. 440,000)

Rationale: These individuals should be immunized to reduce the likelihood that they will expose the vulnerable and, since many health care facilities may be overwhelmed, to assist in home care.

Priority Group 5: Essential Service Providers (est. 70,000)

Rationale: Our ability to mount an effective pandemic response can be highly dependent on these kinds of personnel being in place to maintain key community services. Each State plan will need to determine their own priorities, but they are likely to include:

- Utility workers (water, gas, electricity and telephone and essential communications systems)
- Funeral service personnel
- Personnel who work with institutionalized populations
- Persons who are employed in public transportation and the transportation of

essential goods (i.e., food)

Priority Group 6: Healthy adults younger than 65 years of age (est. 2.1 million)

Rationale: They are at a lower risk of developing severe outcomes from disease but they represent the most significant segment of the population from an economic impact perspective.

Priority Group 7: **Healthy persons one to 18 years of age** (est. 1.6 million)

Rationale: They are at the lowest risk of developing severe outcomes from disease but play a significant role in the spread of the disease.

1. Education Regarding the Priority Groups List for Receipt of Vaccine

Special attention must be paid to educating the general public about the Priority Groups List for receipt of vaccine, including the rationale for the list, the process by which the decisions were made, and what other control measures people can take until influenza vaccine is available for everyone.

2. Vaccination of Essential State Personnel

A system needs to be developed to review and refine the list of essential State personnel. All State agencies should develop lists of essential services and positions. Once the list has been approved (*by whom*?), an order for the total number of doses of influenza vaccine needed will be submitted to the Immunization Program (MIP) Vaccine Unit. The Vaccine Unit will process the order and the requesting State agency will pick up the vaccine from the MIP at the SLI or one of the regional offices.

A contingency plan will be developed to for appropriation of sufficient funds to immunize essential state personnel. A system needs to be developed to clarify who approves the lists and who authorizes distribution of vaccine.

Each state agency should develop a plan to administer vaccine to their essential employees (utilize their own agency's health professional staff, if they have such staff, or contract with VNA's or primary care clinics, etc.).

3. Vaccination of Essential Personnel at the Local Level

Every city and town will develop its own list of essential community personnel, using the Priority Groups List. Each local board of health will submit orders for vaccine based on this list. Each local community will be responsible for administering vaccine to the essential personnel in their communities.

Resources for assistance with administration of vaccine at the local level include pharmacists and retired nurses and physicians.

4. Vaccination of Health Care Workers

This has not yet been determined. See unresolved issues below. "Health care workers" may need to be defined in a very broad sense. Technical (radiology, phlebotomy, respiratory, etc.) and support (clerical, dietary, housekeeping, maintenance, etc.) staff will

be essential to providing adequate medical services. One option is for each health care facility to be responsible for vaccinating its own employees, submitting the number of doses to their local health department, who will pass it on to the MIP Vaccine Unit.

Unresolved issues:

1. *System for developing an authorizing priority groups list at the state level. Should the Public Health Council be involved? Should there be public hearings in order to get buy-in? All this would have to happen before a pandemic actually occurs.*
2. System for getting vaccine to health care workers. Will each facility submit orders for vaccine through local boards of health, or directly to the MIP Vaccine Unit? Discussions should be held around the implications of vaccinating essential personnel and not their families.

- Ensure that appropriate legal authorities are in place that will allow for implementation of major elements of the proposed distribution plan. For example, will State law allow non-licensed volunteers to administer influenza vaccine? Does State law allow for "mandatory" vaccination of certain groups, if vaccination of such groups is viewed by State public health officials as being "essential" for public safety?
- Ensure that contingency plans have been considered for emergency distribution of unlicensed vaccines using emergency IND (investigational new drug) provisions. Such provisions call for strict inventory control and record-keeping, along with completion of a signed consent form.
- Coordinate proposed vaccine distribution plan with bordering states and unique populations (e.g., Native American nations, certain religious enclaves, etc.).

DURING THE NOVEL VIRUS ALERT:

- Meet with appropriate partners and stakeholders and review major elements of the vaccine distribution plan.
- Modify plan as needed to account for updates, if any, on recommended target groups and projected vaccine supply.

DURING THE PANDEMIC ALERT:

- Ensure that human resources and logistics are in place to begin vaccination.
- Coordinate activities with bordering jurisdictions.

DURING THE PANDEMIC:

- Fully activate the vaccination program.
- Coordinate activities with bordering jurisdictions.

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Section 4
Delivery of Antiviral Agents

This section has not yet been developed.

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Section 5
Emergency Response

The Emergency Response section describes the systems that will be used to ensure maintenance of essential medical and other community services in the event of a pandemic.

Assumptions

A. High attack rates will place overwhelming demands on the health care system.
B. Health care providers and emergency response and public safety personnel will be equally or more likely to become infected than the general public.
C. Certain high-risk groups will be less likely to have access to information and services (e.g., people who are homeless, homebound, poor, hearing or visually impaired, undocumented or who do not speak English).
D. Because the pandemic will be widespread, it is unlikely that resources could be diverted from other areas. Every community will have to be prepared to be self-sufficient, while at the same time sharing resources such as hospitals, mortuary services, etc.

DURING THE INTER-PANDEMIC PERIOD:

- **Estimate of Need for Health Care Services.**

  Although there is great uncertainty associated with any estimate of an influenza pandemic's impact, the following estimates of the potential impact of an influenza pandemic on Massachusetts are derived from calculations using the CDC software, FluAid 1.0. These estimates are for one season only and provide estimates for 15%, 25% and 35% attack rates (percentage of clinical influenza illness cases per population). However, no existing data can predict the actual case rates. (For more information on the model used to develop these projections see Meltzer MI, Cox NJ, Fukuda K. The Economic Impact of Pandemic Influenza in the United State: Priorities for Intervention. Emerg Infect Dis 1999;5:659-71.)

  The following table shows estimates of the potential impact of a pandemic on Massachusetts. For planning purposes the assumption is that the worst impact of the pandemic is likely to occur over a 12 – 16 week period.

Range of Estimates[1] of Potential Impact of an Influenza Pandemic in Massachusetts

	Minimum Number	**Most Likely Number**	Maximum Number
Outpatient visits[1]	890,000	**1, 100,000**	1,600,000
Hospitalizations	9,800	**26,000**	33,000
Deaths	3,600	**6,000**	10,000

- **Evaluate Existing Health Care Infrastructure.**
  a. number of hospital beds
  b. number of ICU beds
  c. ventilators
  d. contingency supply of antibiotics
  e. contingency supply of antivirals
  f. medical staff:
     - physicians
     - nurses (includes all nurses licensed by the Board of Registration in Nursing) – 95,000
     - physician assistants
     - respiratory therapists
     - radiology technicians
     - medical, nursing and technical students
  g. contingency medical care facilities (from Comprehensive Emergency Medical Plan)
  h. mortuary/burial services
  i. adequacy of social and psychological services for families of victims

  Because health care personnel will be as affected by illness as the general population, we can expect that there will be high absenteeism rates among health care staff, at least until a vaccine becomes available. While retired health care providers and volunteers can be called on to assist in the care of the ill, it is likely that much of the care will be become the responsibility of families, whether the patient is at home or in a hospital. It will be necessary to develop informational materials, and perhaps short courses, on the care of the sick.

  Unresolved issues:

  1. *Determine existing capacity.*
  2. *Determine any reserve capacity (capacity above that is needed to meet existing needs).*
  3. *Estimate need during a pandemic.*
  4. *Develop contingency plans to address inadequacies in the infrastructure.*

  (Comment: It is beyond the scope of this plan to address inadequacies of a health care infrastructure that is already overwhelmed by the demand for services during normal influenza seasons. This plan, however, may highlight some of the gaps and inform on-going discussions about the need to expand hospital capacity.)

- **Contingency Plans to Meet the Needs of Persons Confined to their Homes.**

  Persons may be confined to their homes by choice, out of fear of being exposed and becoming ill or by direction from State or local health officials in order to reduce transmission in the community.

  The provision of food, medical and other essential support for persons confined to their homes will be the responsibility of local communities. Local communities are encouraged to make use of civic organizations and other volunteers to meet these needs. For instance,

local agencies already engaged in providing services to the homebound (Meals-on-Wheels, etc.) may become the nucleus for voluntary efforts to provide services to people confined to their homes.

In addition, there will likely be situations in which care providers of children or the elderly will become ill and unable to care for their children or elderly parents. Communities will need to have plans in place to identify these situations (e.g., hotlines and or home visiting programs) and contingency plans for caring for these individuals.

Should local communities be unable to meet the needs of the homebound or other residents in need, they can request assistance from the state, according to the following protocol:

> Local elected officials, in coordination with the local Emergency Management Directors, will declare a Local Declaration of Emergency and make a formal request for State assistance. The request for assistance is channeled through MEMA to the Office of the Governor. MEMA may concurrently, or as needed, recommend that a gubernatorial State of Emergency be declared (MCEMP, p. 7).

Following a request for State assistance, MEMA may implement MAESF 15 – Volunteers and Donations, whose purpose it is to expedite the delivery of goods and services in support of disaster relief efforts in the Commonwealth. The primary agency for MAESF 15 is Massachusetts Voluntary Organization Active in Disasters (VOAD).

Local communities are reminded that all areas of the state will be affected during a pandemic and there will be a great demand for assistance from the state. Resources at the state level will have to be allocated according to need and all needs may not be met. Local communities are encouraged to have plans in place that will ensure as much self-sufficiency as possible.

- **Develop Contingency Plans to Provide Medical Care for People Sick at Home**.

  Families will need information about how to take care of sick family members at home, and guidelines regarding when to seek professional medical care. This first-line triage will be essential to eliminating unnecessary calls and decreasing the burden on the health care system.

- **Develop Contingency Plans to Maintain Other Essential Community Services.**

  Personnel who provide essential community services, including public safety and emergency response, will be as likely to become ill during a pandemic as the general public. It is estimated that up to 35% of the population will become clinically ill. With influenza, febrile illness usually lasts 2 – 5 days, but people may take up to two weeks to recover fully.

  State and local authorities will develop lists of essential personnel based on national guidelines. These lists will be used to develop priority lists for vaccination, should vaccine become available. However, it is unlikely that vaccine will be available during the early stages of the pandemic, and may be in short supply when it does become available. In any case, every state agency and organization will have contingency plans to provide essential services during periods of high absenteeism.

Each state agency will develop (or review and update existing lists) of essential services and personnel. Contingency plans will be in place to provide back up for any personnel whose absence would pose a threat to public safety or would significantly interfere with the on-going response to the pandemic. Back up personnel could include reassignment of personnel from non-essential programs within the State agencies, retired personnel and /or private-sector personnel with relevant expertise.

1. **Declaration of State of Emergency**.

   Should local communities become unable to provide essential services, assistance from the State may be requested as described above. Depending upon resources available at the state level, MEMA may activate relevant Emergency Support Functions including, but not limited to:

   MAESF 4 - Fire Fighting

   MAESF 8 - Health and Medical

   MAESF 13 - Military Support (includes personnel to support other MAESF's)

   MAESF 15 – Volunteers and Donations

   MAESF 16 - Law Enforcement and Security

   It is important to note that the agencies responsible for implementing the Emergency Support Functions will be as affected by absenteeism due to illness as the communities requesting assistance. Again, each State agency and local community is encouraged to develop plans that will ensure as much self-sufficiency as possible.

Unresolved issues:

1. *Development of agency-specific contingency plans.*

- **Training and Assistance to Local Communities and State Agencies for Emergency Planning and Response.**

1. Addendum to Local Comprehensive Emergency Management Plan Template

MDPH has drafted an addendum to the template used by local communities in developing their Emergency Management Plans. This template addresses the issues specific to pandemic planning and response, including the need for contingency plans to respond to absenteeism among essential community personnel and vaccine distribution and administration.

2. Regional Training on Influenza Pandemic Planning and Response

In 2000, MDPH conducted regional workshops across the state on Infectious Disease Emergency Preparedness. These workshops included an influenza pandemic scenario. MDPH and MEMA will continue to sponsor regional training on pandemic preparedness for public health, emergency response, public safety and medical officials.

3. Pandemic Preparedness Exercises

MEMA and MDPH will held a pandemic tabletop exercise for the State Emergency Management Team in November 2000.

DURING THE NOVEL VIRUS ALERT:

- Meet with appropriate partners and stakeholders and review major elements of the health sector and non-health sector response plans.
- Modify plan as needed to account for updates, if any, on projected impact of the pandemic.
- Implement contingency plans for obtaining critical equipment and drugs.

DURING THE PANDEMIC ALERT:

- Ensure that human resources and logistics are in place to begin vaccination.
- Coordinate activities with bordering jurisdictions.

DURING THE PANDEMIC:

- Fully activate emergency response plans.
- Coordinate activities with bordering jurisdictions.

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Section 6
Communications

The goal of the Communications Section is to ensure an efficient flow of accurate and consistent information during a pandemic. It is designed to facilitate communication among federal, state and local agencies about influenza activity and circulating strains of influenza virus, and about recommendations for and availability of, vaccines and antivirals, and other recommended health measures. This plan also describes the system for providing information to the general public through the media and other information outlets.

1. Assumptions

A. Dissemination and sharing of timely and accurate information among state and local public health and government officials, medical care providers, the media and the general public will be one of the most important facets of the pandemic response.

B. Different types of information will have to be communicated, often to different audiences.

C. There will be widespread circulation of conflicting information, misinformation and rumors. Communication must be coordinated among all relevant agencies to ensure consistent messages to the general public.

D. There will be a great demand for accurate and timely information regarding:
- Circulation of a pandemic strain
- Disease burden
- Disease complications and mortality
- Disease control efforts, including availability and use of vaccines, antivirals and other preventive and treatment measures
- "Do's and Don'ts" for the general public
- Maintenance of essential community services.

E. There will be a special need for information for the general public about how and why a Priority Group List for receipt of vaccine was developed.
   a. Public education will be an important part of the immunization campaign.

F. Certain groups will be hard to reach, including people whose primary language is not English, people who are homeless, people who are hearing and visually impaired, etc.

G. Demand for information by health care providers will be so great that existing methods for educating health care providers will have to be expanded during the inter-pandemic period.

2. Responsibilities for Communication during a Pandemic

During a pandemic, the Massachusetts Department of Public Health (MDPH) Immunization Program (MIP) will have the primary responsibility for:

a. Collecting and interpreting influenza surveillance data, and for disseminating this information to federal, local and other state public health agencies, health care providers and hospitals. (Collection of surveillance data is described in the Surveillance section of the Massachusetts Influenza Pandemic Plan).

b. Providing up-to date information on the pandemic to other bureaus/programs within MDPH.

c. With guidance from CDC and other national advisory groups, developing and disseminating to health care providers and hospitals (specifically hospital administrators, hospital disaster coordinators, emergency department directors, infection control nurses and hospital epidemiologists, infectious disease directors) guidelines on the prevention, diagnosis and treatment of influenza and influenza-related illnesses.

d. According to the CDC guidelines, in all cases, messages to the general public must be coordinated with a common source. The MDPH Public Information Office and MEMA will develop a system for communicating with the general public about circulating virus, disease burden and control measures.

As described in MAESF 14: *Public Information*, MEMA, with support from the Governor's Public Affairs Office, the Executive Office of Public Safety, and the Secretary of State, will have primary responsibility for:

a. Providing the general public, through the news media, with information on anticipated and on-going emergency response efforts necessary to maintain essential community services during the pandemic.

DURING THE INTER-PANDEMIC PERIOD:

- Develop policies and procedures for the establishment of a vertical pandemic communications system, which mirrors the components of the national system, and a horizontal system to facilitate the exchange of information at the State and local level.

1. Massachusetts Health Alert Network

The system and infrastructure to manage bi-directional communication among relevant federal, state and local public health agencies will be provided through the Massachusetts Health Alert Network. In September 1999, the Massachusetts Department of Public Health received federal funding to implement the Health Alert Network, an enhanced communication system designed to facilitate surveillance and ensure a coordinated response to a pandemic or other unexpected public health event. All relevant local, state and federal agencies will have secure access to critical data and the ability to disseminate information immediately across geographic and political boundaries, disciplines and governmental levels. Access by federal personnel to our surveillance databases, broadcasting systems and training activities will facilitate coordination with federal agencies. MDPH will facilitate communication and coordination between local and federal levels when responding to public health threats.

2. Dissemination of Information through the Health Alert Network

When the Health Alert Network (HAN) is developed, the MDPH will have the capacity to disseminate public health alerts and information to all tiers of the public health infrastructure through broadcast systems that can disseminate information to beepers, phones and faxes simultaneously. These systems also will allow for specific individuals or groups of individuals in the system database to be contacted depending on the situation.

All Health Alert Network participants and appropriate federal and regional agencies/personnel will be part of this system. Authorized users will be able to send broadcasts from touch-tone phone or from the computer-based system at the state health department. One thousand users can be alerted in less than one hour through this system. Listings will be updated on an ongoing basis via in-kind personnel. In addition, access via the Internet to the Health Alert Network web site will allow authorized users to post alerts and other information and disseminate email to all Health Alert Network participants or selected groups depending on the situation.

The HAN will not be fully operational until 2001.

Unresolved Issues:

1. *The system for ensuring common source of information to the general public must be clearly defined. All information about surveillance, vaccines, antivirals and control measures will be generated by the MIP; information about health services by other MDPH programs; and information about emergency response activities by MEMA.*

DURING THE NOVEL VIRUS ALERT:

- The MIP will:
  a. Notify and meet with the MDPH Public Information Office and MEMA to review the Communication Plan.
  b. Notify and meet with the Pandemic Executive Planning Committee (doesn't yet exist) to review the entire Massachusetts Influenza Pandemic Plan, and modify as needed.
- The Executive Planning Committee will implement contingency plans to obtain critical hardware, software or personnel to operate the pandemic communications system.
- The Executive Planning Committee will test the communications system.
- Communication with Special Groups

  In order to ensure that all residents of the Commonwealth have access to information about disease control measures and available services during a pandemic and to reduce the toll from annual influenza disease, MDPH will conduct the following activities:

  a. Ensure that informational materials are available in all appropriate languages.
  b. Identify and work with non-English media.
  c. Utilize all programs within MDPH with constituents in communities where the primary language is not English, and in other special groups, e.g., people who are homeless,

people who are homebound, etc. These programs include, but are not limited to, Primary Care, WIC, Refugee and Immigrant Health, Community Planning, Bureau of Substance Abuse, Executive Office of Elder Affairs, MDPH Elder Health, etc.

d. Identify groups who can ensure that information is accessible to people who are visually or hearing impaired.

e. Foster existing relationships, and create new ones, with community groups providing services to people in the communities listed above.

DURING THE PANDEMIC ALERT:

- The MDPH will:

  a. Notify sentinel surveillance sites in Massachusetts.

  b. Establish an Influenza Pandemic web site where updated information can be posted as needed. This web site will be linked to the MDPH web site and to the CDC web site.

  c. Develop and disseminate guidelines on the prevention, diagnosis, and treatment of influenza and influenza-related illness, using guidelines from the CDC, the Advisory Committee on Immunization Practices and other national advisory groups.

     Note: CDC is in the process of developing prototype communication materials for use during the pandemic. These materials include fact sheets/web-based information/video and audio clips, etc., on influenza, influenza vaccine, antiviral agents, etc., in various languages, as well as information/guidelines for health care providers.

     Until the Massachusetts Health Alert Network (see above) is fully implemented, information, recommendations and guidelines will be disseminated to health care providers and other public health agencies through:

     - MDPH web site: Fact sheets and guidelines on influenza control measures, and epidemiologic information appropriate for the public will be posted on the MDPH web site, and updated on a regular basis. This web site will be linked to the dedicated influenza pandemic web site being developed by the CDC.
     - MDPH Division of Epidemiology and Immunization nurses and epidemiologists will be available to respond to telephone calls from providers during normal working hours.
     - Currently, the Division of Epidemiology and Immunization Surveillance Unit has the capacity for broadcast faxing to boards of health. This capability will be expanded to include other distribution lists in the future.
     - Mass mailings: MDPH maintains databases of boards of health, health care providers, hospitals and other health care agencies/facilities. Information can be distributed through mass mailings on a limited basis.
     - Vaccine distribution system: Currently, information that is not time-sensitive is distributed to boards of health and, through them, to health care providers along with vaccine.

- Newsletter articles: MDPH will provide articles for publication in the newsletters of various professional associations, as well as newsletters of the MDPH Bureaus.

- Education Regarding the Priority Groups List for Receipt of Vaccine

  Special attention will paid to educating the general public about the Priority Groups List for receipt of vaccine, including the rationale for the list, how the decisions were made, and what other control measures people can take until influenza vaccine is available for everyone.

DURING THE PANDEMIC:

- MEMA, with MDPH Public Information Office and the Governor's Public affairs Office, will set up a Joint Information Center to efficiently provide and disseminate accurate and consistent information to the general public. (See MAESF 14, *Public Information*, for a complete description of public information activities during a major disaster.)

  Note: CDC is developing prototype press kits, bulletins, newsletters, etc.

  a. If necessary, MEMA and support staff may operate a 24-hour public information telephone line to deal with citizen's inquiries. This may be augmented by the Secretary of State's Consumer Hotline. MAESF 14 support agencies will provide supplemental staffing as needed. All MAESFs, MAESF 8, *Health and Medical Service*s (MDPH) will routinely brief MAESF 14 staff concerning on-going response actions.

  b. If necessary, MAESF14, *Public Information*, and MAESF 15, *Volunteers and Donations*, will work together to release information concerning what volunteer goods and services are needed, and where volunteers and donors may go to deliver such goods or potential services. (See Emergency Response section).

- MDPH, through the Health Alert Network, will provide information to local health departments and other health care facilities on disease impact and recommendations on prevention and control.

- Education Regarding an Immunization Campaign

  As in mass immunization with any vaccine, it is predictable that two problems will occur:

  a. any symptom or illness that closely follows immunization will be attributed to the vaccine, and
  b. any febrile respiratory illness following immunization will be viewed as a vaccine failure.

  Education of the general public will be an important part of the immunization campaign. (ED Kilbourne. National Immunization for Pandemic Influenza. Hospital Practice 1976:15-21)